

# St. Joseph's Catholic Primary School

## Mathematics Policy

It is through the fascinating world of mathematical discovery that we can continue to live out our Mission Statement here at St. Joseph's School



**"We live, love and learn by the example of Jesus"**

We also, in our teaching of the mathematics curriculum prepare our children in the five outcomes of the "Every Child Matters" document..... and in particular to them

- achieving economic well-being
- making a positive contribution.

### 1. Aims and objectives

Mathematics teaches us how to make sense of the world around us through developing a child's ability to calculate, to reason and to solve problems. It enables children to understand and appreciate relationships and pattern in both number and space in their everyday lives. Through their growing knowledge and understanding, children learn to appreciate the contribution made by many cultures to the development and application of mathematics.

The aims of mathematics are:

- to develop, maintain and stimulate pupils' curiosity, interest and enthusiasm for learning through practical activity, exploration and discussion;
- to promote confidence and competence with numbers and the number system;
- to develop the ability to solve problems through decision-making and reasoning in a range of contexts;
- to develop a practical understanding of the ways in which information is gathered and presented;
- to explore features of shape and space, and develop measuring skills in a range of contexts;
- to enable all pupils to have equal access to mathematics and to experience success in their work.

## **2. Teaching and learning style**

The school uses a variety of teaching and learning techniques in mathematics lessons. We are aware that children have preferred styles of learning, and incorporate visual, auditory and kinaesthetic learning styles into our teaching. Our principal aim is to develop children's knowledge, skills and understanding in mathematics. We do this through a daily lesson that has a high proportion of whole-class and group-direct teaching. During these lessons we encourage children to ask as well as answer mathematical questions. They have the opportunity to use a wide range of resources such as number lines, number squares, digit cards, number fans, whiteboards and small apparatus to support their work. Children use ICT in mathematics lessons where it will enhance their learning, as in modelling ideas and methods. All children have access to a computer suite where they can use a variety of software covering the main areas of number, shape and space and handling data. We also have an interactive whiteboard in each classroom which is used (where appropriate) as part of the daily mathematics lesson. Wherever possible, we encourage the children to use and apply their learning in everyday situations.

In all classes there are children of differing mathematical ability. We recognise this fact and provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this through a range of strategies - in some lessons through differentiated group work, and in other lessons by organising the children to work in pairs on open-ended problems or games. When differentiating work, we take into account the ability of the child in that particular area of mathematics, as children's ability levels may differ with work on number, shape and space and handling data. We use classroom assistants to support some children and to ensure that work is matched to the needs of individuals.

Booster classes are taught to help boost children's mathematical ability in Year 4 and Year 5

## **3 Mathematics curriculum planning**

Mathematics is a core subject in the National Curriculum, and we use the National Numeracy Strategy as the basis for implementing the statutory requirements of the programme of study for mathematics.

We carry out the curriculum planning in mathematics in three phases (long-term, medium-term and short-term). The National Numeracy Strategy Framework for Teaching gives a detailed outline of what we teach in the long term, while our yearly teaching programme identifies the key objectives in mathematics that we teach in each year. We use a range of resources to aid our planning, including the NNS Unit Plans, New Heinemann, Ginn and Abacus.

Our medium-term mathematics plans, which are adopted from the Framework and give details of the main teaching objectives for each term, define what we teach.

They ensure an appropriate balance and distribution of work across each term. These plans are kept and reviewed by the subject leader.

It is the class teachers who complete the weekly plans for the teaching of mathematics. These weekly plans list the specific learning objectives for each lesson and give details of how the lessons are to be taught, including any differentiation. The class teacher keeps these individual plans and they are reviewed by the head on a fortnightly basis and the subject leader termly. The class teacher and subject leader often discuss them on an informal basis.

## **Contribution of mathematics to teaching in other curriculum areas**

### **English**

Mathematics contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. For example, we encourage children to read and interpret problems in order to identify the mathematics involved. The children explain and present their work to others during plenary sessions. Younger children enjoy stories and rhyme that rely on counting and sequencing. Older children encounter mathematical vocabulary, graphs and charts when using non-fiction texts.

### **Information and communication technology (ICT)**

Children use and apply mathematics in a variety of ways when solving problems using ICT. Younger children use ICT to communicate results with appropriate mathematical symbols. Older children use it to produce graphs and tables when explaining their results or when creating repeating patterns, such as tessellation. When working on control, children use standard and non-standard measures for distance and angle. They use simulations to identify patterns and relationships.

### **Personal, social and health education (PHSE) and citizenship**

Mathematics contributes to the teaching of personal, social and health education, and citizenship. The work that children do outside their normal lessons encourages independent study and helps them to become increasingly responsible for their own learning. The planned activities that children do within the classroom encourage them to work together and respect each other's views. We present older children with real-life situations in their work on the spending of money.

### **Spiritual, moral, social and cultural development**

The teaching of mathematics supports the social development of our children through the way we expect them to work with each other in lessons. We group children so that they work together, and we give them the chance to discuss their ideas and results.

## **5 Teaching mathematics to children with special needs**

We teach mathematics to all children, whatever their ability. It is part of the school curriculum policy to provide a broad and balanced education to all children. We provide learning opportunities that are matched to the needs of children with learning difficulties. Work in mathematics takes into account the targets set for individual children in their Individual Education Plans (IEPs).

## **6 Assessment and recording**

We assess children's work in mathematics from three aspects (long-term, short-term and medium-term). We make short-term assessments which we use to help us adjust our daily plans. These short-term assessments are closely matched to the teaching objectives. We also use short assessment tasks to assess children's understanding of a particular topic or focus.

We make medium-term assessments to measure progress against the key objectives, and to help us plan the next unit of work. We use the class record of the key objectives as the recording format for this.

We make long-term assessments at the beginning, middle and end of each academic year and we use these to assess progress against school and national targets. Children receive their school reports mid-year and it is stated whether the child is working below, at, or above the expectation for that particular year group. A target will be set in each core subject including maths. We pass this information on to the next teacher at the end of the year, so that s/he can plan for the new school year. We make the long-term assessments with the help of end-of-year tests and teacher assessments. We use the national tests for children in Year 6, plus the optional national tests for children at the end of Years 3, 4 and 5.

The mathematics subject leader keeps samples of children's work in a portfolio. This demonstrates what the expected level of achievement is in mathematics in each year of the school. A record of end-of-year tests and teacher assessment is also kept, so that the subject-leader can track progression, and to help the class teacher set targets for the class for the following year.

## **7 Resources**

There is a range of resources to support the teaching of mathematics across the school. All classrooms have a wide range of appropriate small apparatus, which cater for visual, auditory and kinaesthetic learning styles. All children have their own small whiteboard for use within the lesson. Calculators, protractors and a range of audio visual aids are available from the resource room and many classes have their own resources. Each year also has mathematical textbooks available for use where

appropriate, and the library contains a range of books to support children's individual research. A range of software is available to support work with the computers.

## **8 Monitoring and review**

Monitoring of the standards of children's work and of the quality of teaching in mathematics is the responsibility of the mathematics subject leader. The work of the mathematics subject leader also involves supporting colleagues in the teaching of mathematics, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school. \*The mathematics subject leader gives the headteacher an annual summary in which she evaluates strengths and weaknesses in the subject and indicates areas for further improvement. \*The headteacher allocates regular management time to the mathematics subject leader so that s/he can review samples of children's work and undertake lesson observations of mathematics teaching across the school. A named member of the school's governing body is briefed to oversee the teaching of numeracy. Mr Coyne, the numeracy link Governor meets with the subject leader to review progress.

\* March 2006 - The Head teacher is the subject leader for Mathematics within the school

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